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EXAMINER

LUKS, JEREMY AUSTIN

ART UNIT

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2837

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/675,204	Applicant(s) SCHUHMANN ET AL.	
	Examiner JEREMY LUKS	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-15 and 23-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-15 and 23-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3, 13, 23-26 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn (WO 00/72344 A1 – The Examiner will refer to DE 199 25 051 C2, provided by Applicant in the IDS for a translation of Kuhn) in view of Moster (6,658,132) and Banter (6,512,834).

With respect to Claims 1, 3 and 13, Kuhn teaches an enclosure (Figure 2, #10) having a front face (front face is shown in Figure 1); a speaker (38) contained within the enclosure (10), the enclosure (10) comprising a plurality of holes (28) sufficient to allow sound to pass from the speaker (38) through the enclosure (10), the plurality of holes (28) in the enclosure covering less than the entire front face of the enclosure (10); and a foil (42) placed in the enclosure (10) over the holes (28), and attached to the enclosure (10) at the foil's (42) perimeter such that the foil (42) acts as a second membrane for the speaker (38), the foil (42) seals the speaker (38) against intrusion by a liquid (Page 8, [0030]), the foil (42) installed only in an area of the enclosure (10) proximate to the plurality of holes (28) in the enclosure (10). Kuhn fails to teach a foil placed on the

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enclosure over the holes, and only attached to the enclosure at the first side's perimeter so that an inner portion of the foil is not attached to the enclosure and is free to vibrate, thereby acting as a second diaphragm for the speaker, the second side not being attached to anything; and the foil being round and being glued only at about the outer 2 to 3 mm perimeter of the foil. Moster teaches a similar device also comprising an enclosure (Figure 3, #12); a speaker (20) contained within the enclosure (12), the enclosure (12) comprising a plurality of holes (48) sufficient to allow sound to pass from the speaker (20) through the enclosure (12) (Col. 5, Lines 12-16); and a foil-like cover (14) placed on the enclosure (12) over the holes (48), and attached to the enclosure (12) at the foil-like cover's perimeter such that the foil-like cover seals the speaker (20) against intrusion by a liquid (Col. 5, Lines 64-65; Col. 6, Lines 4-28); where the foil-like cover (14) has a first side (Figure 4, #56) and a second side (54); and where only the first side (56) of the foil-like cover (14) is connected to the enclosure (12). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Kuhn, with the apparatus of Moster to protect against liquid intrusion, as well as dirt from entering the housing (Col. 5, Lines 64-65). Banter describes a foil in a round shape (See Figure 5, #20) and being glued with adhesive only along the outer perimeter (22) (See Col. 7, Lines 49-53); where the foil (20) is only attached to the enclosure (when combined with Kuhn and Moster) at the first side's perimeter (Figure 6, side of foil #20 having adhesive #24) so that an inner portion of the foil is not attached to the enclosure along an annular region of the foil (20) (See Figures 3-10) and is free to vibrate, thereby acting as a second diaphragm for the speaker (Col. 6, Lines 18-30); the

second side (Figure 6, side of foil #20 opposite adhesive #24) not being attached to anything. Banter further describes that the bonded area be minimized depending on the size and acoustical requirements of the assembly (See Col. 8, Lines 9-14). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus Kuhn as modified, with the apparatus of Banter to provide a protective membrane configured to allow sound energy to pass through with very low attenuation, while focusing acoustic energy to housing apertures.

With respect to claims 23-26 and 31, Banter teaches where the first side of the foil (Figure 6, side of foil #20 having adhesive #24) is directly attached to the enclosure (10) (Col. 8, Lines 51-63); wherein the first side of the foil is attached to the enclosure only using an adhesive (24); and wherein the enclosure (10) provides the only support for the first side of the foil (Figure 6, #20). Moster teaches where the front face (Figures 3 and 4, #24) of the enclosure (12) includes an indentation (60) on which at least a portion of the foil (14) abuts; where a transition from the enclosure (12) to at least a portion of the perimeter of the foil (14) is substantially smooth (See Figure 4); where the indentation (60) abuts along an entire perimeter of the foil (14).

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn (WO 00/72344 A1) in view of Moster (6,658,132) and Banter (6,512,834) as applied to claim 1 above, and further in view of Ford (5,664,015). Kuhn, Moster and Banter are relied upon for the reasons and disclosures set forth above. Kuhn, Moster and Banter fail to teach an enclosure having about thirty of said holes, each hole having a diameter of about 1 mm. Ford describes an enclosure having about thirty holes (See Figure 1,

#78). Ford fails to specify a specific diameter of said holes, however, it would have been obvious to one of ordinary skill in the art at the time of the invention to make said holes about 1 mm in diameter in order to keep drops of water from entering said holes. Further, it would have been obvious to combine the apparatus of Kuhn as modified, with the apparatus of Ford in order to allow for the sound path to be uninterrupted in the event of obstruction to one or more of the sound holes.

3. Claims 5, 6, 9, 11, 14 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn (WO 00/72344 A1) in view of Moster (6,658,132) and Banter (6,512,834) as applied to claim 1 above, and further in view of Bohnke (6,546,107).

With respect to Claims 5, 6, 9, 11 and 14, Kuhn discloses an enclosure (Figure 2, #10) having a front face (front face is shown in Figure 1); a speaker (38) contained within the enclosure (10), the enclosure (10) comprising a plurality of holes (28) sufficient to allow sound to pass from the speaker (38) through the enclosure (10), the plurality of holes (28) in the enclosure covering less than the entire front face of the enclosure (10); and a foil (42) placed on the enclosure (10) over the holes (28), and attached to the enclosure (10) at the foil's (42) perimeter such that the foil (42) acts as a second membrane for the speaker (38), the foil (42) seals the speaker (38) against intrusion by a liquid (Page 8, [0030]), the foil (42) installed only in an area of the enclosure (10) proximate to the plurality of holes (28) in the enclosure (10). Kuhn fails to teach a foil placed on the enclosure over the holes, and only attached to the enclosure at the first side's perimeter so that an inner portion of the foil is not attached to the enclosure and is free to vibrate, thereby acting as a second diaphragm for the

speaker, the second side not being attached to anything; a magnetic shield located between the enclosure and the speaker, providing mechanical protection for the speaker and sitting between the foil and the speaker, the magnetic shield comprising a plurality of holes, which allow the passage of sound, said holes being offset from the holes in the enclosure, and a foil placed on the enclosure and covering the plurality of holes. Moster teaches a similar device also comprising an enclosure (Figure 3, #12); a speaker (20) contained within the enclosure (12), the enclosure (12) comprising a plurality of holes (48) sufficient to allow sound to pass from the speaker (20) through the enclosure (12) (Col. 5, Lines 12-16); and a foil-like cover (14) placed on the enclosure (12) over the holes (48), and attached to the enclosure (12) at the foil-like cover's perimeter such that the foil-like cover seals the speaker (20) against intrusion by a liquid (Col. 5, Lines 64-65; Col. 6, Lines 4-28); where the foil-like cover (14) has a first side (Figure 4, #56) and a second side (54); and where only the first side (56) of the foil-like cover (14) is connected to the enclosure (12). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Kuhn, with the apparatus of Moster to protect against liquid intrusion, as well as dirt from entering the housing (Col. 5, Lines 64-65). Banter describes a foil (20) is only attached to the enclosure (when combined with Kuhn and Moster) at the first side's perimeter (Figure 6, side of foil #20 having adhesive #24) so that an inner portion of the foil is not attached to the enclosure along an annular region of the foil (20) (See Figures 3-10) and is free to vibrate, thereby acting as a second diaphragm for the speaker (Col. 6, Lines 18-30); the second side (Figure 6, side of foil #20 opposite adhesive #24) not being

attached to anything. Banter further describes that the bonded area be minimized depending on the size and acoustical requirements of the assembly (See Col. 8, Lines 9-14). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus Kuhn as modified, with the apparatus of Banter to provide a protective membrane configured to allow sound energy to pass through with very low attenuation, while focusing acoustic energy to housing apertures. Bohnke teaches a magnetic shield (Figure 4, #AD) located between the enclosure and the speaker, providing mechanical protection for the speaker, the magnetic shield comprising a plurality of holes, which allow the passage of sound, said holes being offset from the holes in the enclosure (Col. 3, Lines 37-65; Col. 4, Lines 62-67). When used in combination with Kuhn, the protection plate will sit between the foil and the speaker. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Kuhn as modified, with the apparatus of Bohnke to provide a magnetic cover in the form of a shielding plate which is substantially impermeable to static magnetic fields from an electrodynamic/magnetic transducer, at least in the sound exit region of the transducer.

With respect to claims 27-30, Moster teaches where the front face (Figures 3 and 4, #24) of the enclosure (12) includes an indentation (60) on which at least a portion of the foil (14) abuts; where a transition from the enclosure (12) to at least a portion of the perimeter of the foil (14) is substantially smooth (See Figure 4); where the indentation (60) abuts along an entire perimeter of the foil (14).

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn (WO 00/72344 A1), Moster (6,658,132) and Banter (6,512,834) as applied to claim 1 above, and further in view of Daddis (6,029,942). Kuhn, Moster and Banter are relied upon for the reasons and disclosures set forth above. Moster further teaches a first cover (Figure 3, #12 (front/left side)) and a second cover (Figure 3, #12 (back/right side)), and the second cover (12) having at least one boss (Figure 5, where screws #51 pass through; can also clearly be seen unlabeled in Figure 3) engaging a printed circuit board (PCB) (26). Kuhn, Moster and Banter fail to teach wherein said boss having a plurality of deformable ribs that deform when the PCB is pressed with the first cover against the ribs until the first cover meets the boss. Daddis discloses a boss (Figure 5, #22), which is inserted through a hole of a support element (28), said boss (22) having a plurality of deformable ribs (Figure 6, #35) which deform when the support element (28) is pressed with the first cover (32) against the ribs (35), until the first cover (32) meets the boss (Figure 5, #22). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Kuhn as modified, with the apparatus of Daddis in order to protect the internal components of the PCB from vibrations or impact.

5. Claims 10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn (WO 00/72344 A1), Moster (6,658,132), Banter (6,512,834) and Bohnke (6,546,107) as applied to claim 9 above, and further in view of Daddis (6,029,942). Kuhn, Moster, Banter and Bohnke are relied upon for the reasons and disclosures set forth above. Moster further teaches a first cover (Figure 3, #12 (front/left side)) and a

second cover (Figure 3, #12 (back/right side)), and the second cover (36) having at least one boss (Figure 5, where screws #51 pass through, can also clearly be seen unlabeled in Figure 3) engaging a printed circuit board (PCB) (26). Kuhn, Moster, Banter and Bohnke fail to teach wherein said boss having a plurality of deformable ribs that deform when the PCB is pressed with the first cover against the ribs until the first cover meets the boss; and the PCB being installed such that the distance between a top surface of the PCB and the front cover is within a certain margin of error regardless of the PCB's thickness. Daddis discloses a boss (Figure 5, #22), which is inserted through a hole of a support element (28), said boss (22) having a plurality of deformable ribs (Figure 6, #35) which deform when the support element (28) is pressed with the first cover (32) against the ribs (35), until the first cover (32) meets the boss (Figure 5, #22). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Kuhn as modified, with the apparatus of Daddis in order to protect the internal components of the PCB from vibrations or impact. With respect to the PCB being installed such that the distance between a top surface of the PCB and the front cover is within a certain margin of error regardless of the PCB's thickness; a change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). Further, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working range involves only routine skill in the art. In re Aller, 105 USPQ 233. Still further, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from

a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

Response to Arguments

6. Applicant's arguments with respect to Claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. The Examiner considers the obvious combination of Kuhn, Moster, Ford, Banter, Bohnke, and Daddis to teach all of the limitations described by Applicant.

7. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

8. In response to applicant's argument that the combination of Kuhn, Moster and Banter does not teach the claimed limitations, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

9. Regarding the Banter reference, Figure 6 shows an adhesive support #24 only on one side of the membrane #20 for attaching the membrane to the enclosure, similar to Applicant's claim 3.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEREMY LUKS whose telephone number is (571)272-2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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